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Profile

a guide to military careers

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November 1984

to the readers

FREE! FREE! FREE! Yes, PROFILE magazine is free to all high school and college counselors and ROTC units. However, there is a SINGLE REQUIREMENT—completion of a readership validation card. In order for the DOD High School News Service to retain our low cost, controlled circulation mailing privilege, we are required to have on file a SIGNED document asking to receive or to continue receiving the magazine. The United States Postal Service inspects these documents every two years.

Recently, many new schools were added to the PROFILE distribution list through a list of schools obtained from the Department of Education. Only schools with a tenth grade or higher were added to the list and pure vocational-technical schools were deleted. Thus, 27,000 organizations will need to complete a reader verification card this year and every two years thereafter.

The JANUARY issue of PROFILE will contain a reply verification card.

To keep receiving PROFILE at no cost, please fill out the card, SIGN IT, and return it to us as soon as possible. You will also be able to correct any address errors and make suggestions for what you would like to see in the future issues of PROFILE, if desired.

Unfortunately, we may have to delete those organizations which do not return the card.

Beginning with this November issue, high school counselors will begin receiving a second copy of PROFILE. Although this still isn't enough copies for every counselor at a school, we hope it helps a little. Any school which urgently needs more copies should write us a letter explaining the circumstances and we will try to be accommodating.

The New Basic Facts issue will be published in January 1985. Copies of the 1984 Basic Facts issue are still available. Our address and phone number are listed on the contents page. We have an exciting, informational series of magazines planned for you this school year.

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FLARE

Profile

a guide to military careers Vol. 28 No. 1 November 1984

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About the covers

Front: Air Force Staff Sgt. Tyrone Gardner, a crew chief with the 94th Aircraft Maintenance Unit, Langley Air Force Base, Hampton, Va., digs out the correct technical manuals before performing maintenance and refueling operations on an F-15 Eagle. (Photo by Pamela Travis)

Back: With her mission near completion, a recruit feels the thrill of victory as she climbs the rope - the last station on Parris Island's obstacle course for women. (Photo by Chris Hawthorne)

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The F-15 crew chief

Riding herd on the multimillion-dollar F-15 requires a mixture of technical knowledge, sweat and elbow grease.

by Staff Sgt. Craig Pugh

Maybe the idea took shape during those long afternoons spent reading aviation books in a Washington, D.C., library.

As the heroes of aviation came to life on the pages before him, Larry Smith often imagined what it would be like to fly or repair airplanes.

His interest led to building model airplanes. By the time he was a senior in high school, his grades had earned him more than one scholarship opportunity. Instead of attending college, he followed his heart.

Larry Smith is now Air Force Staff Sgt. Smith, an F-15 Eagle crew chief and member of the 1st Tactical Fighter Wing's (TFW) 94th "Hat in the Ring" Tactical Fighter Squadron. The "Fightin' First," from Langley Air Force Base, Hampton, Va., is the F-15 component of the newly established U.S. Readiness Command (formerly the Rapid Deployment Force), with readiness as it's highest priority.

Every member of the wing plays a key role in achieving their high degree of readiness, but few contribute more than the wing's crew chiefs.

"Our first concern is maintaining safe aircraft," Smith said. "For pilots to successfully complete a mission, they must have confidence in our work. They can't afford worrying about the airplane 'breaking' when they're flying."

Like most crew chiefs, Smith is a jack-of-all-trades. He has to be part diplomat to deal with the various maintenance specialists performing major repairs in the shops; mechanic who knows exactly what to do when his airplane leaks, drips, or breaks; and a business manager capable of coordinating engine repairs or radar replacements between flights.

The powerful twin engines of the F-15 are mute during preflight maintenance. Crew Chief Staff Sgt. Tyrone Gardner carefully follows a checklist to insure all systems of the "Eagle" are working properly. F-15 crew chiefs are responsible for "babysitting" most parts of the aircraft from the jet engines to the nose. (Photo by Bob Renner)

He never loses sight of the fact that he's responsible for one of the most advanced fighter aircraft ever built.

"When I look at the F-15, I see more than a bunch of metal parts on an airframe," Smith said. "I see a machine—a living, breathing machine."

He works on the twin-tailed Eagle day in and day out. In many ways, he's gotten to know its needs as well as his own.

"Now that may not seem like a big deal to some people, but that aircraft represents me personally, and I do everything possible to make sure it's ready to fly and fight."

Perhaps without realizing it, the slender, 6-foot sergeant had repeated the words of a code that crew chiefs everywhere live and work by: "to make sure it's ready to fly and fight."

The care and feeding of an Eagle dominates a crew chief's workday world. The road to the flight line starts with a 30-day technical training course. After completing the crew chief training—plus knowing their way around servicing panels, button releases, air-lock fasteners, and gun-bay doors—crew chiefs are certified as an F-15 mechanic.

Next crew chiefs attend advanced training classes including months reviewing films and studying maintenance procedures.

"The instructors require work to be meticulous," Smith said. "Everything had to be done right the first time. I learned inspecting, what to look for, the names of parts, how to put power and cooling air on the aircraft—you name it.

"At first I thought he was too strict. But looking back I realize the experience was one of the best things that ever happened to me. I learned the value of discipline—and to avoid shortcuts." he said.

"A crew chief has to be part diplomat and part mechanic. He has to know exactly what to do when his airplane leaks, drips or breaks."

Crew chiefs and chiefs in the 1st TFW get plenty of time to practice readiness launches. About four times yearly the wing goes all out for a knock-down, drag-out mass launch of F-15s as part of a mobility exercise.

If the exercise were for real, all the maintenance crews would be air-lifted to the squadron combat operating location. Most of the crew chiefs generate aircraft on the flight line, where it seems as though elephants are jumping the walls and everyone's trying to drain the swamp—never mind the alligators.

The wrench benders and knuckle busters strain their muscles along with the other specialists as they hang extra fuel tanks on the airplanes. Vans race up and down the ramp delivering specialists at selected Eagles that require extra hardware or maintenance.

Tool boxes, hydraulic equipment, and servicing carts are hauled out to the planes. Pilots adjust parachutes, G-suits, or helmets and inspect their fighters while specialists set up the cockpit switches. Tractors tow racks of yellow-nosed air-to-air missles in the pre-dawn hours. But there is organization in what looks like chaos.

Crew chiefs never stop looking for something to go wrong. Staff Sgt. Larry Smith (on ladder) and Staff Sgt. Tyrone Gardner check out the cockpit systems on an F-15 during a routine maintenance inspection. (Photo by Bob Renner)

F-15 crew chief Staff Sgt. Tyrone Gardner examines a wheel assembly on an "Eagle" prior to changing the tire. Using a jack similar to that used on some automobiles, crew chiefs can quickly change the F-15's tires. Most normal maintenance operations are performed under the sky on the flight line in all types of weather. (Photo by Pamela Travis)

"When your airplane is ready, you run over and help another crew with theirs," Smith said. "We all know we have a job to do and everybody puts out their work. During exercises we forget about being three individual squadrons. We merge into one concentrated launch team."

"For pilots to successfully complete a mission, they can't afford worrying about the airplane 'breaking.'"

"A lot is riding on our crew chiefs," said Chief Master Sgt. Mike McGee, the 94th Tactical Fighter Squadron's aircraft maintenance unit noncommissioned officer-in-charge. "But I think mechanics today are more interested in crewing airplanes than my generation was. The F-15 is a Star Wars-type machine. Our specialists also get to crew it, and that's exciting.

"On a recent TDY (temporary duty) at Nellis Air Force Base, (Las Vegas), crew chiefs spent extra time cleaning their jets. You believe that? I'm talking Las Vegas, where most people can't wait to get into town. But these young men and women we're getting in today have a little something extra that makes them special.

McGee felt that most crew chiefs are sharp, conscientious, and very positive about the wing's mission. Indeed, crew chiefs and aircraft maintenance specialists make up the largest career field in the Air Force, 4,000 of them. Aircraft systems maintenance specialists, on whom the crew chiefs depend the most, run a close second.

Crew chiefs are trained to be familiar with every system of the aircraft. They know a little bit about a lot of things, but when maintenance work gets technical or complex, they rely on the appropriate maintenance systems specialists in hydraulics, electronics, or other fields.

"I always feel confident when our crew chiefs launch me on a mission," said Capt. James D. "Tony" Mahoney, a pilot and the other half of the F-15 flying team.

"In addition to knowing they have the Eagle in top shape, I know I can depend on them. We work well together."

As any crew chief knows, every airplane in the fleet is a reflection on its crew chief. And among the rows of 1st TFW F-15s at Langley, that reflection is very bright.

Fill 'er up! Filling an F-15 with hundreds of gallons of jet fuel is only one of a crew chief's responsibilities. Staff Sgt. Tyrone Gardner insures that the fuel coupling and the grounding wires are on tightly before refueling his "Eagle." (Photo by Pamela Travis)

newsbriefs

Eight year obligation

Soldiers enlisting after June 1, 1984, will incur an eight- vice six-year military obligation. Officials say the two-year increase will ultimately strengthen the Individual Ready Reserve (IRR).

The new policy increases the time soldiers remain "on call" with the IRR after leaving active duty or reserve units. The IRR's rosters provide the military's primary source of trained personnel available during emergency war-time situations.

Army IRR forces today number some 250,000. Officials say no substantial increases will appear as a result of the new obligation until after 1990.

They also stress that the new policy is not retroactive, and will not lengthen the military obligation of any current service member.

Mosquito control

A highly effective, non-toxic mosquito control substance, developed at the Naval Research Labratory, has been approved by the Environmental Protection Agency and is now available to mosquito control districts across the nation.

The new substance is not a poison. Rather, a thin film of the substance is spread on the surface of the water. Immature mosquitos in the pupal and larval stages die from drowning as they come to the water's surface to breathe and the substance wets their breathing tubes.

The substance, which controls mosquitos without harming other life forms, is now being produced commercially under license from a U.S. Navy patent.

Blimp Patrol

The Coast Guard has began a search for a blimp to use in anti-smuggling and rescue operations. With a top speed of 100 mph, officials say the blimp will be more economical to operate than other craft. The first blimp, equipped with a rescue hoist, inflatable raft, and quarters for six, should be on patrol off the Florida coast by 1985.

"Attack computer" near test

Air Force pilots are testing a computer system which plans air-to-air and air-to-surface missions for fighter planes.

The tactical flight management system, being developed by McDonnell Aircraft Co., calculates the most desirable course and speed to avoid air defenses and takes advantage of terrain for low-altitude flying.

The system can automatically fly the aircraft according to plan as well as provide gun-pointing and snap-shooting capability during a dogfight.

Air Force pilots are testing the system in the company's flight simulators. McDonnell officials say the system could be ready for operational use in three to five years.

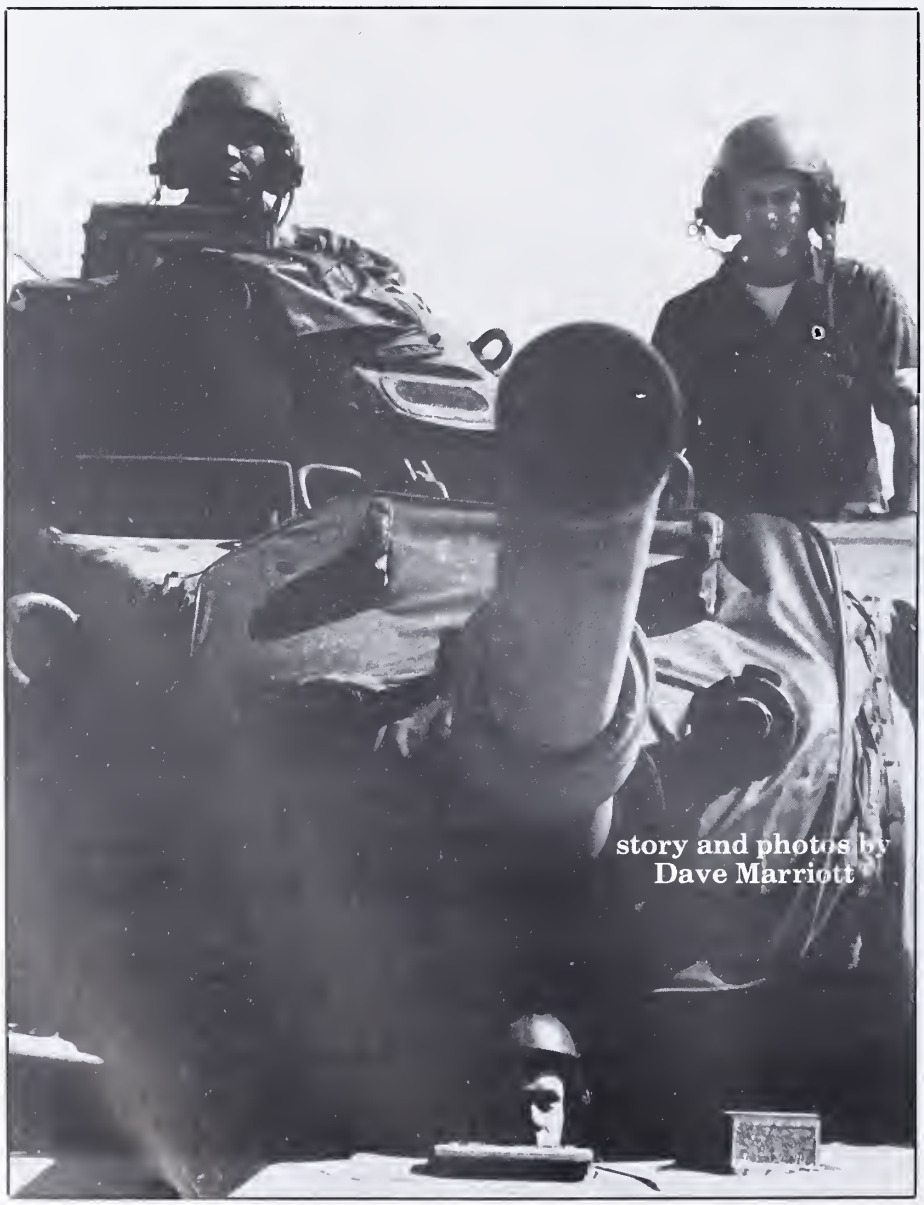
Donald Duck Retires

After 43 years of honorable service, Donald Faunterloy Duck has been retired from active Army service.

The Walt Disney character was inducted March 24, 1941, in a film called "Donald gets drafted." He served as a soldier throughout World War II in several other films. His likeness has also been used as a symbol on ships, airplanes and as a unit insignia.

Donald was promoted to sergeant, then retired during an armed forces parade in Torrance, Calif., May 19. Lt. Gen. Arthur E. Brown, Director of the Army Staff and Grand Marshall for the parade, performed the promotion and retirement honors.

56 TONS OF GUN



story and photos by
Dave Marriott

SHOCK EFFECT.

Ask a dozen people to define it, and nine times out of ten they'll say it's the physical symptoms associated with serious injuries, or the emotion experienced when encountering out-of-the-ordinary situations. But ask a Marine Corps tanker to define shock effect, and the answer might surprise you.

"Many tankers consider shock effect as one of our weapon systems," said Staff Sgt. John Whitmore, a platoon sergeant with 2nd Tank Batallion, Marine Corps Base, Camp Lejeune, N.C. "Tanks are big, loud and heavy. Regardless of where a tank travels, the engine makes noise, and its weight causes the ground to rumble. Add to this a tank's destructive capability, and it creates a frightening situation. That's how we define shock effect - the psychological effect an approaching tank has on the enemy."

Shock effect is one weapon at a tank crew's disposal. Marine Corps tanks mount a 105 mm cannon, a 7.62 coaxial machine gun, and a .50 caliber machine gun.

And they all are extremely versatile considering their 56-ton weight. A tank travels 300 miles at 20 mph, climbs three-foot walls, crosses eight-foot ditches, climbs 60 degree grades and drives horizontally on a 45 degree grade without tipping or rolling. It also fords up to eight feet of water.

"Tank platoons operate in front of infantry columns, patrolling the area for enemy elements," said Sgt. Keith Flood, a tank commander. "Once we scout the area, we set up in a "hide" or camouflaged position and protect the infantry as they move through."

The tank commander is the only visible crewmember. From his position on top of the turret, he directs all the tank's firing, movement, and defends against air attack.

The gunner sits inside the turret, directly below and in front of the commander. He fires both the main cannon and the coaxial machine gun.

"I use three sights to locate

targets," said Cpl. Michael Kvarness. "I have a day sight, a passive or night sight, and an infinity sight. The day sight magnifies to 4400 meters, the passive to 1000 meters. The infinity sight is a clear glass window I traverse with. Once I find a target, I use the other sights to aim in."

While on operations, the loader does most of the strenuous work. He keeps the cannon and both machine guns loaded.

"Machine gun ammo isn't too heavy," Flood said. "But, lifting 50 pound cannon rounds in a confined space all day isn't an easy task either." The loader also acts as radioman and standby driver.

Driving a tank is similar to driving a car. It has an automatic transmission with park, reverse, neutral, high and low gears, and a gas and brake pedal. The difference is the steering. A tank's steering column looks like bicycle handlebars.

"I try to keep the ride as steady as possible," said Lance Cpl. Arthur Seegart, a tank driver at Camp Lejeune. "Tanks are equipped with a stabilization system. When engaged the system locks the main gun on target regardless of which way the tank sways. Even with the aim locked, it's easier to complete the mission if the ride is smooth. I also locate good, concealed, firing positions.

"If I know my tank will return to a temporary base between missions, we'll construct stationary camouflage," he continued. "We use poles, nets and local vegetation to build a garage-like structure. This enables us to come and go as needed, while providing cover from air attacks."

Unlike most combat troops, tankers carry no tents. "When we're in the field, we sleep on or under the tank," Flood said. "Many times the weather mandates sleeping inside the tank. There's barely room for four men to sit in a tank, let alone sleep. But, if it's a choice between getting soaked or being uncomfortable, we usually opt for the latter."

There is some danger working with tanks. But according to Gunnery Sgt., Leon Samuel, a veteran tanker, "it pertains more to bodily injury than combat wounds."

"Lets face it," Samuel said. "At 56 tons, whatever a tank touches, it takes and breaks.

"Marines must keep that in mind when working around tanks," he continued. "The key to staying healthy and whole is safety precautions. If a tank runs over a foot, that section of foot is gone, period. We treat tanks in that aspect—if it gets part of a body, it keeps it."

Tankers begin their training with a nine-week course at Fort Knox, Ky.

"When Marines graduate from tank school, they know how to drive and maintain tanks," Flood said. "They know its weapons nomenclature and the correct aiming and firing techniques. The school teaches all the basic skills. The only duties not covered are the tank commander's.

"Advanced training begins once the Marine reports to his new unit," he continued. "Tank commanders train their own crews. After a few years in the unit, most Marines can perform in any position, including tank commander."

"Most tankers stay tankers because they like the job," Whitmore said. "Tankers work hard. For every hour of operating time, there's four hours of maintenance work. A tank has no light parts. Lifting some of the parts requires the entire crew.

"For example," he continued, "if we're in the field and a track breaks, it takes the crew a minimum of two hours to repair. In addition to the heavy work, we spend as much time on field exercises as we do at home. If a person doesn't like working outdoors on heavy equipment, tanks definitely are not the place to be."

"Being a tanker has some big benefits," laughed Samuel. "One is when we're in the field, we always ride instead of walk.

"Seriously, though," he continued, "tanks can offer some benefits most other career fields can't.

"One of the foremost is leadership. Because our field is so small, leadership is practiced one on one. This allows skills to be developed quicker, while building a personal relationship between leader and men.

"Another good aspect is promotions," Samuel added. "Tankers compete for promotions as fiercely as other Marines in larger career fields. However, because of our size, outstanding performers are more rapidly recognized and rewarded.

"I've been in tanks for 13 years, and as far as I'm concerned, there's no better place to be," he concluded. "The job's both exciting and rewarding. I like knowing I'll always be working with professionals. And, besides that, where else can I get a job commanding 56 tons of gun?"

Cpl. Michael Karness aims [illegible] main gun.

tidbits & technology

Cop keeps eye on vehicles

A new cop with a memory that can't be beat is now stationed aboard Marine Corps Air Station (H), New River, N.C. This cop knows everthing there is to know about drivers and their vehicles.

The cop is actually COPS, a computerized on-line police system that keeps a record of vehicles registered aboard three Marine air stations. It records all essential information concerning any vehicle and its owner.

The system is capable of identifying persons whose driving privileges have been suspended on other bases, or provide a list of all vehicles registered on base that match a specific description.

"Compared to the old system, this one is terrific," said Sgt. Donald Yazell, a military policeman stationed at New River's Pass and I.D. Section. "My advice to everyone that drives aboard this or any other base is obey the rules and regulations governing them, because at some bases, super COPS are on the lookout for crime."

Launch complex dedicated

The newest member of America's space program—the second launch complex for astronauts—was christened in May at Vandenberg Air Force Base.

The complex is part of a west coast launch and recovery facility at the 154-square-mile base in central California. Officials expect all construction to be completed by October 1985.

82nd Airborne gets new weapon

The M-249 Squad Automatic Weapon (SAW) is making its Army debut in the 82nd Airborne Division at Fort Bragg, N.C.

The SAW, which weighs 21.9 pounds when loaded with its 200-round magazine, has a range of 1000 meters for suppressive fire, 800 meters for area fire, and 600 meters for point fire. It is also capable of firing 700 rounds a minute.

The weapon, which provides a light-weight, one-man-portable base of fire, will eventually replace two M-16s in each rifle squad. And because its ammunition is relatively light, the SAW is also being eyed to replace the division's M-60 machine guns. Such a move, if approved, would enable more ammunition to be carried into combat and loaded aboard aircraft.

Navy finds missing link

"It is the link that has been missing in ship to shore cargo movements," said Larry Bean, Navy Sea Systems Command, of a newly developed crane ship which the Navy's Military Sealift Command recently tested.

The crane ship is capable of unloading container ships in primitive ports with no lifting facilities, modern ports where container cranes have been damaged by enemy action, or "in the stream" without any port facilities.

The SS Keystone, currently undergoing tests in Newport News, Va., is the first of 11 cargo ships scheduled to be converted.

"Seeing eye" radar

Coast Guard stations are testing a new radar system called FLIR (Forward-Looking Infrared Radar).

The $100,000 device mounts on a helicopter body and is capable of "seeing" objects in dark or inclement weather conditions by detecting differences in heat. Its picture screen can produce an image of a person adrift in the water from as high as 500 feet and up to one-half mile away.

Only four air stations are currently using the device, but because of the system's success, officials expect it to be used nationwide within a year.

Trained to save lives

story and photo by Tracy L. Tanner

"Man overboard." screams the cutter's coxswain. "Man overboard!"

The cutter's deck comes alive with action. The crew scurries about grabbing life preservers. The coxswain shuts down the engines and steers his craft closer to the victim. Within seconds, the 'man overboard' is rescued from the York River's chilling waters. With the rescue complete, the cutter continues on its way.

The 'man overboard' turned out to be a float thrown into the icy waters by the cutter's coxswain and instructor, Petty Officer 1st Class John Marquardt. In a moment of relaxed time underway, Marquardt decided to test his students. "Their reaction time was great," he said. "Although this was just a drill, it's important to locate the man in the water and get him out as quickly as possible. The crew did just that."

Drills like the 'man overboard' become daily exercises to the men and women attending the coxswain's school at the Coast Guard Reserve Training Center in Yorktown, Va. During the 20-day training period, students spend 18 days at sea learning the coxswain's many duties.

A common misconception is that the coxswain simply steers a boat. Actually, coxswains are responsible for the boat, the crew and the steering. More often than not, the coxswain holds the added responsibility of rescuing stranded vessels and crews. Because the job encompasses a wide scope of responsibilities and duties, the training received at Yorktown is invaluable to young men and women earning their coxswain badge.

"Coxswain is the most responsible job given an enlisted person in the Coast Guard." Marquardt said. "Each time a coxswain takes out a boat, he is responsible for the boat, the crew and, if on a search and rescue mission, the lives of those in distress. That's the reason for the intense training."

Unlike many schools, upon completion of the 20-day course, students are not considered fully qualified, and do not pin on their coxswain badge. "They return to their station or travel to a new station," Marquardt said. "Once there, they begin 40-hours of on-the-job-training under the supervision of a qualified coxswain. Eight of these 40 hours must be performed during night patrols. At the end of the training, they take the boat out with the commanding officer on board. If they demonstrate the necessary skills, they become certified coxswains," he concluded.

Once certified, they wear the coxswain badge. Although the badge is nothing but a simple piece of metal, it reflects highly on the individual wearing it. To his or her comrades, it states, 'This person will go out in any type of weather, at any time of day, to save those in distress.'

To the coxswain it means a little more. He has passed his final test and will be an asset to his services' mission of saving lives.

Petty Officer 1st Class John Marquardt poses as a man overboard while students attending the Coxswain School at the Coast Guard Reserve Training Center in Yorktown, Va. rescue him.

BEGINNINGS

Story and photos by
Rudy Hernandez

Marine Corps Recruit Depot, Parris Island, S.C. serves as home of the Marine Corps' only 'boot-camp' for women.

Women from across the nation travel to this 8,000 acre, triangular-shaped marshland to earn the title "Marine."

Their journey ends in the early morning hours when a team of seasoned women Marines me them at the entrance to the Women's Recruit Training Co mand. Here, they're hurried f the bus to attend an indoc-trination lecture and questio answer period.

The first night begins six o of administrative processing Recruits gather uniform issu

take medical examinations, and complete testing and interviews for job classification. The seventh day marks the start of 56 days of challenging training. During the next eight weeks, the recruits will change from civilians to professional military members.

Each day, recruits awaken at 4:45 a.m. and undergo a grueling 16-hour schedule of training and classes. There is little time for rest, other than meals and the hour of free time each evening to study, write letters, and press and polish uniforms.

Three phases divide the training cycle. Each covers different subjects and aspects of military life, with physical fitness and drill (marching) stressed throughout.

Introductory instruction, designed to instill a sense of pride, spirit and discipline, makes up the first phase. Recruits take their initial physical fitness test and attend classes on first aid, uniform regulations, military history and courtesy, the M16A1 rifle and more.

The second phase is more action oriented. Recruits rappel off a 42-foot tower, fire rifles, spend time in the field learning survival tactics, and qualify at swimming. In addition, they learn the correct way to wear and apply make-up, both in and out of uniform.

Evaluations fill the final phase. Drill instructors and company officers test the recruits on academic subjects, marching and physical fitness. Dress uniforms are fitted and inspected.

The two months of training culminates on the day every recruit looks forward to—graduation day. This is the day they first bear the title "Marine."

CURING is the name of their game

story and photos by Tracy L. Tanner

A favorite skit from television's Hee Haw goes something like this:

A spastic patient walks into a country physician's office. "Doctor, Doctor, it hurts when I do this," he moans.

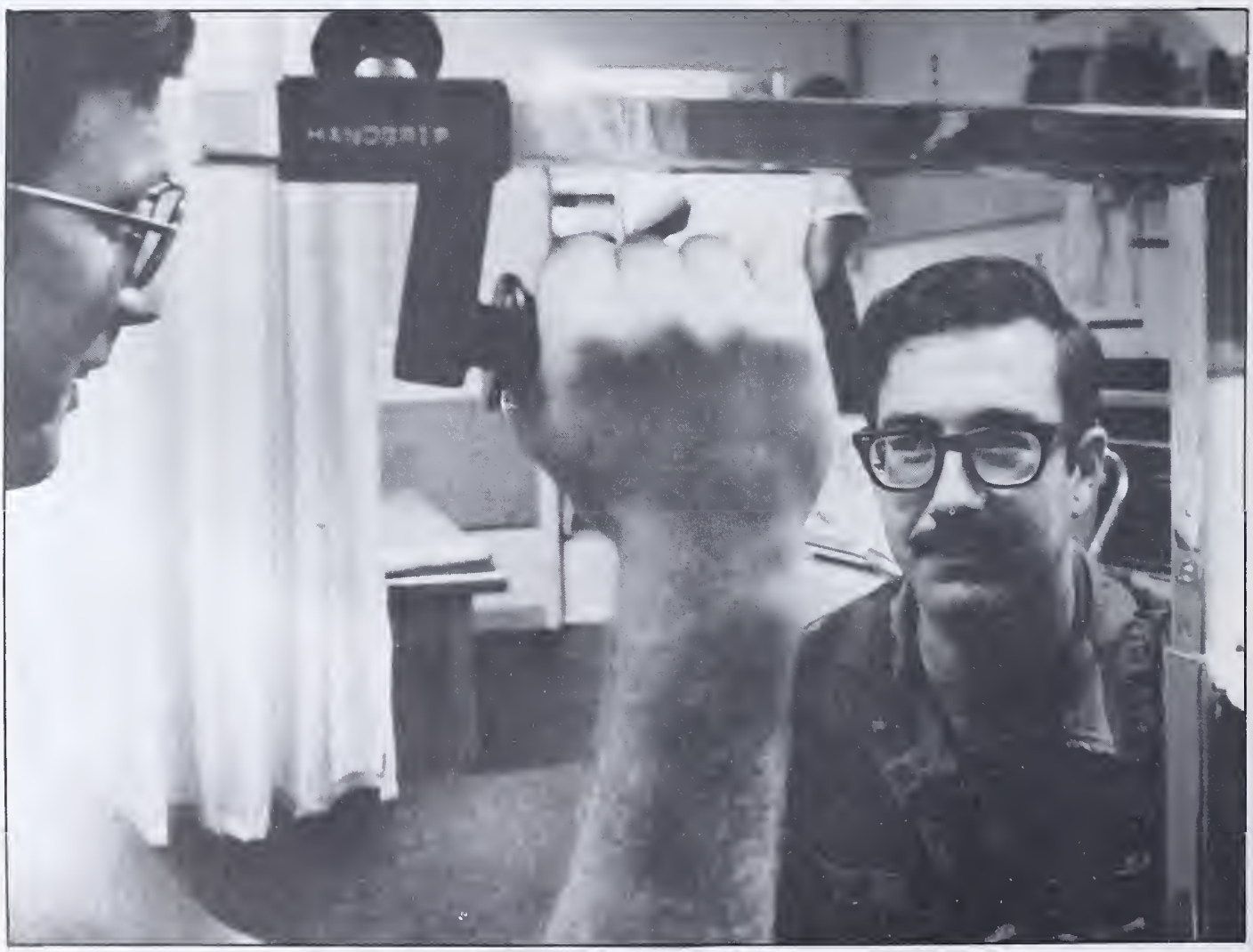
"Well," replies the comical doctor, "don't do that!"

Laughs follow and the doctor continues puffing on his stogie. The doc performed his function of getting a few laughs and the patient is none the worse for wear. Great for TV, but in real life, when a person complains of pain, he wants some action. In this day of miracle medicine, he expects a cure.

Curing is the name of the game for Spec. 5 Frank Hughes of Biloxi, Miss. Working as an Army physical therapy specialist at McDonald Army Hospital, Fort Eustis, Va., he sees and alleviates a lot of pain.

"The patient and I work together as a team," explained Hughes. "If the patient doesn't care if he gets better, or isn't willing to put forth the effort toward his recovery, then no treatment in the world will work. I try to make the patient understand why he experiences the pain and where I'm leading him."

Many times, Hughes motivates his patients to work through their pain. This, explained Hughes, can



be the most difficult aspect of his job. "I joined the Army to help people. When I see the pain caused by my treatment it makes me feel bad. But, through my training, I know we're working toward a better end and that keeps me going."

Army medical specialists train at the Academy of Health Sciences, Fort Sam Houston, Texas. Soldiers seeking the physical therapy specialty must first attend the Combat Medic's course.

During this course, they receive classroom and hands on training in basic doctoring. They learn emergency first aid, major and minor pressure points, how to administer shots and draw blood.

"The course requires a lot of studying," said Hughes. But, once you know the material it seems to stay with you. Although I'm not responsible for giving shots, I know I could if I had to."

After completing the Combat Medic's course, soldiers move on to their specialty schooling. The first few weeks of the nine-week Physical Therapy course is classroom work. Like the Combat Medic's course, the physical therapy training requires intensive studying.

"The memorization needed in this field is extensive," said Hughes. "We memorized each bone and muscle in the human body, as well as which muscles cause what action. Although I found this interesting, remembering each muscle's name and function was difficult, to say the least."

During six weeks of hands on training, students learn different massage techniques, and how to operate physical therapy equipment. Once they master both techniques and the equipment, they graduate as physical therapy specialists and receive assignment orders.

Physical therapists can expect to be stationed at one of the Army's many medical centers throughout the world. Hughes considers this an added bonus to his career field, "We don't pull field duty," he joked. "But, our daily work load keeps us extremely busy.

"Patients can't expect to enter our clinic sick in the morning and walk out cured that same afternoon," Hughes explained. "We work with them on a regular basis. Depending on the injury, we may see the same person every day for months. Because of the treatment lengths, I become personally involved with each patient. I know who I need to push harder and who will work on their own.

"The job can be frustrating," Hughes continued, "but it can also be rewarding. Working through the frustration and seeing a person who came in here crippled, walk out cured, is worth all my pleading, coaxing and threatening. I am accomplishing what I joined the Army to do . . . help people."

Spec. 5 Frank Hughes, an Army physical therapy specialist, applies heat to his patient's damaged knee.

Spec. 5 Ken Koch gives moral support as he works out a patient's sore arm muscle.

Thanks to Army & Navy opticians

by Tracy L. Tanner

The importance of sight, like the other senses, often escapes people. Because of society's fast pace, many people find themselves rushing here and there, not stopping to notice the bright orange glow filling the sky at sunrise, or the transformation from brown to green as spring slowly pushes winter aside. But, take away the senses while wandering through a forest and chances are many will go "bump" in the dark. Sight is, as many would agree, the most important of the five senses.

At one time, prior to World War II, the military considered sight extremely important. So important, that unless young men had excellent vision, they were barred from serving. And, should they fail to maintain excellent vision, discharged.

Thus, there was little or no need for the services to worry about where to obtain glasses, how much they would cost, or how many man hours would be lost until glasses could be produced.

Shortly after the beginning of World War II, government policy makers decided to lower the requirements for draftees and volunteers. Visual acuity, included in this change, resulted in a rise in the military services' need for spectacles.

Civilian opticians had trouble meeting military requirements and time schedules. The addage, 'If you want something done right, do it yourself,' applied. The military established their own optical programs, and began training opticians.

Today, soldiers, sailors, airmen, Marines and Coast Guard personnel requiring glasses receive them free, regardless of their location. Chief Michael Salyer of the Naval Opthalmic Support and Training Activity (NOSTRA) in Yorktown, Va. explained, "It's a tri-service agreement between the Army, Navy and Air Force. The Navy splits the world geographically with the Army. The Army provides glasses for everyone west of the Mississippi, including overseas locations such as Hawaii and Japan, and the Navy provides glasses for everyone east of the Mississippi and Europe.

"Geographically, it works out very well," Salyer continued. "The Army's facility is located in Aurora, Colo. at the Fitzsimmons Army Medical Center, and the Navy's facility is located in Yorktown at the Naval Weapons Station. There are Army and Navy single vision units peppered around the states and in several overseas locations," he added.

Soldiers and sailors working at Yorktown and Aurora ensure the finished glasses match each prescription perfectly. In order to meet this requirement, both labs are arranged similar to assembly lines.

From the minute the prescription reaches the lab, until the finished product is mailed, opticians check and recheck the lenses for accuracy.

The process begins with an optician selecting the proper frames and rough lenses. Next, the lenses are surfaced to the correct specifications. After surfacing, the lenses are fined down and polished by machines before

Spec. 4 Jon Kissinger prepares a semi-finished lens to be surfaced. (Photo by Ken Richards)

(Right) After the lenses have been surfaced, Spec. 5 Hongki Min fines down and polishes them using a lab polishing machine. (Photo by Ken Richards) (Below) Petty Officer 2nd Class Lori Torres performs a final check on completed glasses before sending them to the service member. (Photo by Tracy L. Tanner)

being matched with the prescription. Polished lenses are then shaped to fit the frames.

"Opticians must be perfectionists," Sanders said. "If the eyeglasses don't fit the prescription perfectly, they may actually harm an individual's eyesight. In our assembly line set up, each optician checks the work of the preceding optician. This leaves little room for error."

Once the lenses have been framed and cleaned, they receive a final inspection before being shipped to the service member.

Approximately 40 percent of the military requires glasses. "Opticians work extremely hard," said Chief Larry W. Sanderson, assistant director for the surfacing branch at Yorktown. "The figures are astronomical when you consider our 120 person crew produces 30,000 pairs of glasses a month."

In addition to producing all the military's glasses, the Colorado and Virginia locations also house the Army's and Navy's opticians schools. Students spend approximately six months learning their trade. The National Academy of Opticianry recognizes the quality of the training, and gives many students credit toward their associate's degree.

Long gone are the days when less than excellent vision barred an individual from military service. But, the Armed Forces still recognizes the importance of good eyesight for its members. Thanks to Army and Navy opticians, thousands of service men and women worldwide are looking good through specially prescribed glasses.

Coast Guard Pilots

Have "High" aspirations

Story and photos by Stacey Jaudon Jascur

Some people join the Coast Guard to sail the seas, some prefer to keep their feet on terra firma, and then, there are those with "high" aspirations, the ones who want to fly. For those prospective Coast Guard aviators, a trip to the Florida panhandle is the first step in turning their dreams of flying into a reality.

One's desire to fly is first challenged by six weeks of Aviation Preflight Indoctrination training at the Naval Air Station (NAS) Pensacola, Fla. Afterward, pilots can anticipate 20 weeks of training in T-34C Turbo Mentor jets at nearby NAS Whiting Field. If the pilot's future includes flying helicopters, he or she must also endure additional weeks of training.

"The training is not impossible but very demanding,' Cmdr. Larry Rogers, Student Control Officer at Training Wing Five, NAS Whiting Field said. "During pre-flight indoctrination, student aviators undergo a thorough physical. One of the more crucial areas of the physical is the trainees' vision. All trainees must have 20/20 uncorrected vision," he emphasized.

During training, aviation students study navigation, aircraft power plants and principles of aerodynamics. Students also study flight physiology, and land and water survival.

Some consider survival training to be the toughest segment of the school. Water survival includes a one-mile swim and drown proofing combined with parachute entanglement training. As dramatized in the movie, "An Officer and a Gentleman," aviation students encounter dunkers simulating aircraft that have crashed and inverted in water.

A survival outing in the wilderness, self-defense taught in the boxing ring and enduring the obstacle course comprise land survival training.

"The training teaches students to pay attention to detail and to respond quickly and accurately," said Lt. Dave White, a Navy boxing instructor at NAS Pensacola. "Ring training also helps prepare pilots for anything that might happen in the cockpit."

Even though women have been attending flight school at Pensacola for some time, they are still part of a minority. Ensign Cynthia Axell, in her first weeks of training, said that being female is not a big issue. "The school is

Ensign Cynthia Axell practices the 1-2-1 (jab-power-jab). Boxing teaches flight students to respond quickly and accurately.

tough no matter what sex you are. It all depends on how badly you want to be a pilot."

The trainee's dream of flying comes true shortly after completion of pre-flight indoctrination. Assigned to a training squadron at Whiting Field, students attend three weeks of ground school.

After ground school, training takes to the sky, beginning with primary flight and familiarization with basic instruments. "Acrobatic and formation flying are also a part of this primary phase," said Lt. Vic Zoschak, senior Coast Guard instructor for Training Squadron 2 at Whiting Field.

Lt. j.g. Thomas Ostebo, a trainee in the primary phase said, "When I'm up there flying acrobatics, the only thing in my head is what I have to do next. Sometimes it gets hot and heavy."

After the primary phase, students enter an intermediate phase for further refinement of flying skills. Still flying the Turbo Mentor, the training becomes more defined.

After intermediate training, students assigned to fly fixed-wing aircraft for the Coast Guard transfer to Corpus Christi, Texas, for advanced training. Prospective helicopter pilots remain at Whiting Field for 17 weeks of primary helicopter training.

Lt. j.g. Bob Moers, helicopter instructor said, "We teach them the basics. This is a small squadron, so the attention is personalized. At this point, we try to treat them like officers instead of students."

After completing flight training, students receive their hard-earned flight wings. With their dream of flying now a reality, the pilots go on to the bigger challenge of flying missions for the Coast Guard.

(Above) The dunker tank teaches flight students how to escape from an aircraft which has crashed and inverted in water.

(Below) Radar controllers use scopes to direct, track and assist aircraft in their area.

The gathering place

By Laurie Scott

Several million years ago, a series of what were once dormant volcanoes resting 15,000 feet beneath the surface of the Pacific, began a succession of violent eruptions.

The tempest beneath the sea was so violent, in fact, that it resulted in a chain of mid-Pacific islands which were destined to become the crossroads of the Pacific. Capt. James Cook, the first European to spot the islands, called them the Sandwich Islands (after the Earl of Sandwich). Seventeen years later, the islands were renamed "Hawaii".

Hawaii's verdant valleys and gentle slopes contrast sharply with the island's violent beginnings. Vertical cliffs, which exist in aesthetic harmony with rolling lowlands, provide a provocative stimulus for the senses. These features, combined with crystal blue skies, showers that create brilliantly colored rainbows, and frolicking tradewinds are the ingredients characteristic of paradises.

Oahu, Hawaii's most commercialized island, was the result of lava that flowed between the volcanoes Koolau and Wainea—two mountain ranges that presently form the islands eastern and western borders.

The island was once a meeting place for Hawaiian royalty and as a result, earned the nickname, "The Gathering Place." The name still appropriately describes the island. Although Oahu is Hawaii's third largest island, it houses 82 percent of the state's population.

Despite the visual appeal, the laid-back atmosphere, and the historic intrigue of Oahu, sunshine is probably the island's biggest commodity. An average temperature of 75 degrees Farenheit attracts approximately two million tourists annually. The warmest months are August and September with an average balmy temperature of 78 degrees and the coldest month is February with an average teeth-chattering temperature of 72 degrees.

The Hawaiian islands are sometimes referred to as "The Islands of Rainbows". Although the islands' vivid rainbows have become something of a trademark, the term also refers to the multi-ethnic population which covers the entire spectrum of skin tones.

Visitors or newcomers to Hawaii who expect to meet people of 100 percent Hawaiian blood may be disappointed. It is even more difficult than finding a 100 percent native American on the mainland. Only about .9 percent of Hawaii's population is pure Hawaiian.

Hawaii is comprised primarily of minorities. The Japanese population dominates the islands at 27 percent. Filipines make up about 11.3 percent, Chinese 4.8 percent, Koreans 1.7 percent, Samoans 1.4 percent, Puerto Ricans .4 percent and Blacks .2

With the famous Diamond Head looming in the background, scuba divers prepare for a dive in the Fort DeRussy Beach area near Waikiki. Equipment can be rented at nearly all of the dive shops on Oahu for the experienced diver. For the beginner, many shops offer introductory or half day courses. (Photo by Celeste Rubanick)

HAWAIIAN POINTS OF INTEREST

ALOHA TOWER—Offers an excellent view of the harbor area.

CHINATOWN—An exciting blend of shops, and restaurants are located in downtown Honolulu.

PARADISE PARK—An extensive tropical exhibit set amidst gardens, mountain streams and waterfalls in Manoa Valley. Hundreds of tropical birds inhabit the park.

DIAMOND HEAD—A world renowned landmark that bounds Waikiki Beach on the south. An extinct volcano, it is said to have once been the home of Pele, the Fire Goddess.

WAIKIKI—In addition to sandy beaches surrounded by clean, blue pacific waters, Waikiki offers entertainment and sights comparable to those found in much larger cities. Whether it's a beach luau or an evening at one of the many popular discos, the flavor is distinctively Hawaiian.

WAIMEA FALLS PARK—A lush, green 1800-acre valley was inhabited by the native Hawaiians for several hundred years. Evidence of their culture has been unearthed during recent excavations. Many sites are still under archaeological study.

POLYNESIAN CULTURAL CENTER—Gives visitors insight into that unique Hawaiian atmosphere. An evening extravaganza, "Invitation to Paradise," features authentic Polynesian dances, chants and songs.

percent. Hawaii is the only state in the union where caucasians are a minority (20.7 percent).

Military members are not counted in Hawaii's overall population. As of September 1982, Army, Navy, Air Force and Marine Corps installations on Oahu had a combined population of 42,945. The military residents, in conjunction with tourism, have contributed considerably to the economic growth of Oahu.

Visitors arriving at Honolulu International Airport detect something "different" in the air. Maybe it's the sweet, intoxicating fragrance of hibiscus or orchids at airport lei stands, or perhaps it's the aloha spirit of airport employees.

For those interested in Hawaii's origins, Honolulu is rich with Hawaiian history. The state capitol, just east of the Honolulu Harbor, rests in the midst of some of Hawaii's most historic buildings - Iolani Palace, the Mission Houses Museum and Kawaiahao Church. Often referred to as the Westminster Abbey of Hawaii, the church was once the site of coronations, inaugurations, weddings and funerals of the monarchy.

Just a block away from the church is the Mission Houses Museum. The Mission Houses are the oldest existing buildings. Erected by Honolulu's first missionaries, they provide an historic glance into early civilized life on Oahu through furnishings and other items indigenous to the 1820's. Also in the vicinity is Iolani Palace, a national landmark and the former home of Hawaii's last two monarchs. It is the only royal palace in the United States.

Once an island unmarred by the marks of progress, Hawaii today feels the strain of the modern world. Whether a new highway is built or a new condo is erected, Hawaii's natural beauty diminishes in some small way each day. History dictates that Hawaii as we know it will no longer exist some day. Once the ball of progress starts rolling, it is difficult to stop. But through the efforts of conservationists, ecologists and concerned islanders, Hawaii's beauty will hopefully be preserved for future generations to enjoy.

A Pacific Bottlenose dolphin at Whaler's Cove, Sea Life Park, soars 25 feet to the yardarm of the Essex (a duplicate of the original whaling ship), for a handful of fish.

KEEPING AN EYE ON THE SKY

story and photo
by Dave Marriott

Remember back in the mid 1970's when movie makers had a rage about aircraft disasters? Every year at least one studio produced a film depicting an airline emergency. No matter what the calamity, at least one scene showed air traffic controllers tracking the stricken flight's progress.

While few serious in-air emergencies occur, air traffic controllers actually do follow the progress of all aircraft. And it's not only civilian controllers that track aircraft, the Navy has air traffic controllers that monitor aircraft as well.

"Navy air traffic controllers perform the same duties as their counterparts in the Federal Aviation Administration (FAA)," said Chief Petty Officer Linda Dunn, an air traffic controller at Master Jet Base, Oceana Va. "As

air traffic controllers, our job is to ensure the safe, orderly and speedy movement of aircraft into and out of our landing area. At a base the size of Oceana, I'm talking in excess of 177,000 arrival and departures yearly."

Initial training for Navy air traffic controllers begins with a 14-week course at the Naval Air Technical Training Center in Millington, Tenn. Utilizing both classroom and hands-on training, students master the basic knowledge and skills required to become an FAA certified air traffic controller.

Following graduation from Millington, Navy controllers report to bases scattered around the globe. Unlike other military and civilian controllers, Navy controllers serve both on land and at sea.

Upon arrival at their new duty stations, air traffic controllers enter an on-the-job training program leading toward qualification in either the tower or the radar room.

"It's not only recent graduates of school that enter the training program," Dunn said. "Every controller does, regardless of rank or experience. The amount of time an individual stays in the training program depends on their experience and which position they're training for."

The first order of business for an air traffic controller is memorizing their base's air space. "Each airfield has unique characteristics," Dunn said. "Both tower and radar controllers must know the characteristics of their air space to operate effectively. For a tower controller it means memorizing a standard 5-mile radius from the tower. The radar controller's area varies from base to base. The area could be as large as 60 miles with an elevation of 23,000 feet or as small as 10 miles and 3,000 feet. Depending on the airfield, qualification takes anywhere from six to 18 months."

Tower controllers work in one of three positions - ground controller, flight data or local controller.

"Tower controllers have distinct and separate duties," said Petty Officer 1st Class Lee Doyle, a tower supervisor at Oceana. "The ground controller directs all aircraft movement approaching or departing the duty runway, including coordinating and supervising any taxiing and towing of aircraft or movement of support and emergency vehicles. Flight data acts as a relayer between base operations and the radar room, keeping both the ground and local controller informed of all incoming and outgoing traffic.

"Local controllers have the most difficult job in the tower," he continued. "In addition to being completely familiar with the surrounding air-space, it's imperative that the local controller be able to visually identify aircraft and know their operating capabilities once identified.

"At a master jet base like Oceana we have aircraft performing touch-and-goes. The pilot lands just long enough for his wheels to touch the ground before taking off again. The aircraft performing 'touch-and-goes' use the duty runway and have to be sequenced between arrivals and departures. If the local controller doesn't have a sound knowledge of aircraft and their capabilities, it will be impossible for them to keep 'touch-and-go' flights and regular traffic operating simultaneously," Hoyle concluded.

Where tower controllers work in a well lit room, radar controllers work in darkness. The only light found in a radar room is the reflection off the air traffic controllers' scopes.

The radar scopes are large round objects which project a picture of the controller's air space. The picture projected looks similar to most television station's weather watch scopes. Using these scopes, radar controllers plot, track and interpret aircraft flight data.

"Radar controllers direct, track and assist all aircraft in their air space, including those landing at the base and those just flying through the area," Dunn said. "It's radar's responsibility to notify pilots of local weather conditions, the amount of air traffic and any unusual objects that could impede a safe flight or landing, like water towers, unique terrain characteristics or flocks of birds. Radar also informs the tower when an aircraft enters the approach pattern.

"Radar's duties sound easy," she continued, "but they aren't. Quite often a radar controller has to communicate with numerous aircraft simultaneously. Due to the complexity of radar's air space and the mission they perform, rarely will a newly assigned controller qualify in 12 months."

The Navy has approximately 2,400 men and women stationed in towers and radar rooms around the globe, both on land and at sea. Twenty-four hundred, highly trained, air traffic controllers dedicated to a single cause—ensuring Navy pilots and aircraft arrive safely.

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FLARE

Women recruit training Page 12

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